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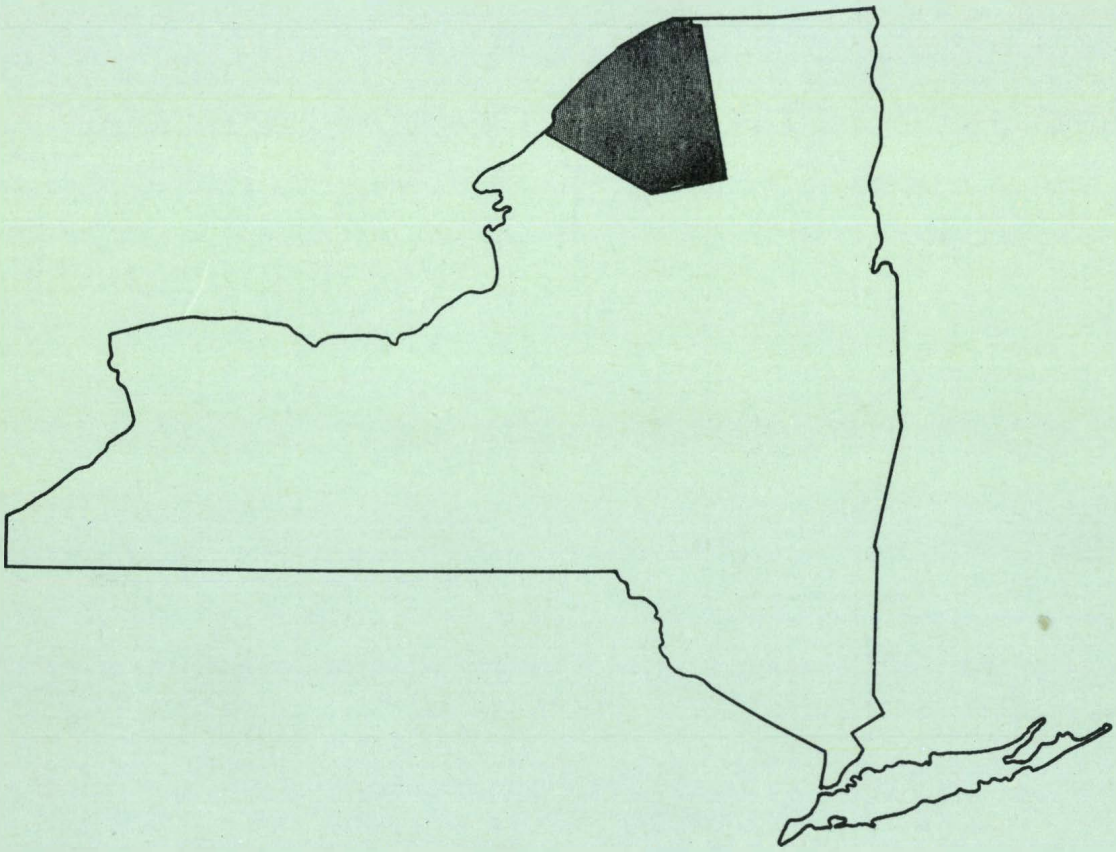
Forest Statistics For NEW YORK Forest District No 7



NORTHEASTERN FOREST EXPERIMENT STATION
FOREST SERVICE, U. S. DEPARTMENT OF AGRICULTURE
Upper Darby, Pa. Ralph W. Marquis, Director

FOREST STATISTICS SERIES: NEW YORK NO. 2

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FOREWORD

This is the second in a series of reports about forest areas and timber volumes in the State of New York. These reports are products of the forest survey of the Northeast, carried on by the Northeastern Forest Experiment Station as part of the nation-wide forest survey being made by the Forest Service, U. S. Department of Agriculture.

A similar report is planned for each of the other forest districts in the State of New York.

The New York Department of Conservation aided the Northeastern Station greatly in the forest survey of the State. The Department not only provided the aerial photographs used in the survey, but also cooperated in many other phases of the work.

Field work done in Forest District No. 7 was supervised by Harry W. Camp, Jr. The statistical procedures for obtaining field-inventory data were developed by C. Allen Bickford. Computations were made under the supervision of Roland H. Ferguson.

Ralph W. Marquis

Ralph W. Marquis
Director

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FOREST STATISTICS FOR NEW YORK FOREST DISTRICT No. 7

by

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GENERAL

Forest District No. 7 contains only one county, St. Lawrence--the largest in New York. It is located in the northern part of the State adjacent to the St. Lawrence River. All the land in the district drains into this river.

The northwestern half of the district is relatively flat: many dairy farms are located here. However, much of the poorer land is being abandoned. The rock substratum is near the surface and in many places fire and erosion have exposed large areas of it, destroying the land's value as pasture.

In the southeastern part of the district, the foothills of the Adirondack Mountains begin. This is a land of lakes and hills and swamps and forest.

The Forest Area

The total land area in the district is 1-3/4 million acres. More than half of this is forested.

Nearly three-fourths of the forest area is concentrated in the southeastern half of the district.

About 68,000 acres, in the Adirondack Forest Preserve in the southeastern part of the district, are reserved from commercial timber cutting. Another 1,000 acres of forest land are considered incapable of producing commercial timber. The remaining 912,000 acres are classed as commercial forest land.

Ownership

About 73 percent of the commercial forest land is held by industrial and other nonfarm private owners. Twenty-three percent is in farm forest lands. The remaining 4 percent is publicly owned--chiefly in State "production forests."

The Forest Types

The principal forest type is sugar maple-beech-yellow birch. This type is found on the better-drained soils. One third of the commercial forest area is in this valuable type.

About one-fourth of the commercial forest area is covered by the aspen-gray birch type. This is a temporary type usually found on areas that have been clear-cut, burned, or abandoned for agricultural use.

Softwood types occupy about one-sixth of the commercial forest area. The most extensive softwood types are cedar-tamarack-spruce and spruce-fir. Numerous less extensive types occur on the rest of the commercial forest area. These include ash-elm-maple, spruce-fir-hardwood, hardwood-white pine, white pine, and white oak.

Condition Of The Forests

Saw-timber stands of more than 5,000 board feet per acre are few; only 8 percent of the commercial forest area runs to this volume. But this small area contains more than one-third of the saw-timber volume. So the remaining two-thirds is spread over more than nine-tenths of the forest area.

One-third of the commercial forest land is stocked with trees of sapling size or smaller. Some of this land has literally no stocking at all. It will be many years before these stands will be able to produce merchantable timber.

Timber Volume

There are 1½ billion board feet (International ¼-inch rule) of live saw timber on commercial forest land in the district. More than half of this volume is in five hardwood species: sugar maple, elm, red maple, yellow birch, and beech. About one-fourth is in three softwood species: hemlock, spruce, and white pine.

The volume of primary growing stock totals 604 million cubic feet. Of this about 312 million cubic feet are in saw-timber trees and 292 million cubic feet are in pole-timber trees.

The cubic volume of primary growing stock is equivalent to 7½ million rough standard cords.

The field work for this survey was completed before the storm of November 1950. However, the volume of timber blown down on commercial forest land in St. Lawrence County is relatively small--less than 1 percent. The storm loss has not been deducted in this report.

NEW YORK FOREST DISTRICT NO. 7

Table 1.--Land area by major classes of forest land, 1949

Class of land[1]	Area	
	Acres	Percent
Forest land:		
Commercial	912,200	51
Reserved[2]	68,500	4
Noncommercial	1,200	(3/)
Total forest land	981,900	55
Nonforest land	792,200	45
All land[4]	1,774,100	100

[1] See Appendix for definitions.

[2] Adirondack Forest Preserve.

[3] Less than 0.5 percent.

[4] From Areas of the United States 1940, Bureau of the Census. Water areas of 1 to 40 acres are included here in the estimate of nonforest acreage.

Table 2.--Commercial forest area by ownership, 1949

Ownership class	Acreage held	
	Acres	Percent
Private:		
Farm forest land[1]	210,500	23
Other private	662,100	73
Total private	872,600	96
Public:		
State[2]	36,000	4
County	3,200	(3/)
Municipal	400	(3/)
Total public	39,600	4
All ownerships	912,200	100

[1] Census of Agriculture, 1950.

[2] Production forests.

[3] Less than 0.5 percent.

Table 3.--Commercial forest area by forest type, 1949

Forest type	Area	
	Acres	Percent
Cedar-tamarack-spruce	67,200	7
Spruce-fir	41,400	5
Spruce-fir-hardwood	31,000	3
Other softwood types	20,100	2
Sugar maple-beech-yellow birch	309,900	34
Aspen-gray birch	258,000	29
Ash-elm-maple	99,000	11
Other hardwood types	85,600	9
All types	912,200	100

Table 4.--Commercial forest area by forest-type group and stand-size class, 1949

Forest type	Saw-timber stands	Pole-timber stands	Other stands	All stands	
	Acres	Acres	Acres	Acres	Percent
Softwood types	43,600	53,200	62,900	159,700	17
Sugar maple-beech-yellow birch	173,400	129,100	7,400	309,900	34
Aspen-gray birch	10,000	82,300	165,700	258,000	29
Ash-elm-maple and other hardwood types	71,700	41,000	71,900	184,600	20
All types	298,700	305,600	307,900	912,200	100
Percent	33	33	34	100	--

Table 5.--Volume of live timber on commercial forest land by species, 1949

Species	Primary growing stock		Saw timber[1]
	Thousand cu.ft.	Equivalent in cords	Thousand bd.ft.
Hemlock	56,500	706,200	178,000
Spruce	52,200	652,500	113,800
White pine	23,600	295,000	103,900
Fir and other softwood	45,700	571,300	53,600
All softwood	178,000	2,225,000	449,300
Sugar maple	73,900	923,800	213,900
Elm	53,800	672,500	195,900
Red maple	92,100	1,151,200	173,100
Yellow birch	43,400	542,500	168,200
Beech	45,200	565,000	149,100
Basswood	17,400	217,500	65,400
Black cherry	12,900	161,200	52,900
Aspen	44,500	556,300	34,800
Ash	14,700	183,800	22,100
Other hardwood[2]	28,300	353,700	15,900
All hardwood	426,200	5,327,500	1,091,300
All species[3]	604,200	7,552,500	1,540,600

[1] Log scale, International ¼-inch rule.

[2] Includes 23,400,000 cubic feet or 292,500 cords of so-called nonmerchantable species such as gray birch and hophornbeam.

[3] In addition there are 27,700,000 cubic feet of net volume in live cull trees. Sound material in all trees amounts to 129,400,000 cubic feet. Some of this material is utilized locally.

Table 6.--Volume of live timber on commercial forest land by diameter class, 1949

Diameter class[1] (inches at breast height)	Primary growing stock	Saw timber
	Thousand cu.ft.	Thousand bd.ft.
Softwood:		
6	31,700	--
8	39,500	--
10	32,300	115,300
12	22,400	92,200
14	17,600	76,900
16	10,100	47,900
18	5,500	29,500
20	10,300	44,100
22	4,600	23,300
24 and more	4,000	20,100
All softwood	178,000	449,300
Hardwood:		
6	63,700	--
8	85,000	--
10	71,900	--
12	43,300	186,700
14	41,900	211,500
16	45,900	247,800
18	26,900	151,100
20	18,400	111,200
22	7,100	43,800
24	8,800	50,200
26	10,900	71,600
28 and more	2,400	17,400
All hardwood	426,200	1,091,300
Total	604,200	1,540,600

[1] Each class includes all trees falling within the range from 1.0 inch less than to 0.9 inch more than the indicated diameter. Thus, the 6-inch class includes diameters in the range 5.0 to 6.9 inclusive.

Table 7.--Volume of live timber on commercial forest land by forest type, 1949

Forest type	Primary growing stock	Saw timber
	Thousand cu.ft.	Thousand bd.ft.
Cedar-tamarack-spruce	19,100	27,100
Spruce-fir	46,000	102,600
Spruce-fir-hardwood	32,200	93,200
Other softwood types	24,000	82,300
Sugar maple-beech-yellow birch	267,100	767,100
Aspen-gray birch	86,400	100,700
Ash-elm-maple	82,200	250,300
Other hardwood types	47,200	117,300
All types	604,200	1,540,600

Table 8.--Average net volume per acre of live timber on commercial forest land by stand-size class, 1949

Stand-size class (and acreage of each class)	Primary growing stock	Saw timber
	Cubic feet	Board feet
Saw-timber stands:		
More than 5,000 bd.ft. per acre (73,500 acres)	1,940	8,180
1,500-5,000 bd.ft. per acre (225,200 acres)	1,040	2,940
Pole-timber stands:		
More than 600 cu.ft. per acre (203,300 acres)	820	860
200-600 cu.ft. per acre (102,300 acres)	300	390
Other stands (307,900 acres)	100	210
Average, all stands[1] (912,200 acres)	660	1,690

[1] Hardwoods constitute 66 percent of the total board-foot volume, or 70 percent of the total cubic-foot volume in the average stand. The average cubic volume, in all stands, is equivalent to 8 cords per acre.

APPENDIX

DEFINITIONS OF TERMS

Forest Land

Forest land.--Includes (a) land that is at least 10 percent stocked by trees of any size and is capable of producing timber or other wood products, or of exerting influence on the climate or on the water regime; (b) land from which the trees described in (a) have been removed to less than 10 percent stocking, and which has not been developed for other use; and (c) afforested areas. Forest tracts of less than 1 acre and isolated strips of timber less than 120 feet wide are not included.

Commercial forest land.--Forest land that is (a) producing, or physically capable of producing, usable crops of wood (usually saw timber), (b) economically available now or prospectively, and (c) not withdrawn from timber utilization.

Reserved forest land.--Forest land that has been withdrawn from timber utilization through statute, ordinance, or administrative order.

Noncommercial forest land.--Forest land incapable of yielding usable wood products (usually saw timber) because of adverse site conditions, or so physically inaccessible as to be permanently unavailable economically, and not withdrawn for specified purposes.

Forest Types

Forest types are defined according to the species, or species groups, that make up the major portion of the stand in terms of board feet in saw-timber stands or number of stems in other stands. "Other softwood types" include white pine and white pine-hardwood. "Other hardwood types" include hardwood-spruce-fir, hardwood-white pine, and white oak.

Stand-Size Classes

Saw-timber stand.--A stand that contains saw-timber trees having a minimum net volume per acre of 1,500 board feet (International ¼-inch rule).

Pole-timber stand.--A stand that fails to meet the saw-timber stand specification, but is at least 10 percent stocked with pole-timber and larger trees, with 200 or more cubic feet of primary growing stock per acre, and with at least half this minimum volume in pole-timber trees.

Seedling and sapling stand.--A forest stand that does not qualify as either a saw-timber or pole-timber stand but has at least 10 percent stocking of trees, with at least half the minimum stocking in saplings and seedlings.

Other stands.--Forest stands that do not qualify as saw-timber, pole-timber, or seedling and sapling stands; also nonstocked areas.

Tree Classes

Saw-timber trees.--Trees that contain (1) a butt sawlog or (2) upper sawlog net volume that amounts to 50 percent or more of the gross volume in the main stem between stump height (1 foot) and top of the uppermost sawlog. Softwood saw-timber trees are at least 9 inches in diameter at breast height (d.b.h.); hardwood saw-timber trees are at least 11 inches d.b.h.

(Sawlogs are defined as follows: Softwood sawlogs are at least 6 inches in diameter, inside bark at small end; 8 to 16 feet in length; sound and straight enough to be manufactured into commercial lumber; and, for the smaller logs, generally free of surface defects other than small tight knots. Hardwood sawlogs are at least 8 inches in diameter, inside bark at small end; 8 to 16 feet in length; suitable for sawing into commercial factory lumber, construction materials, or ties.)

Pole-timber trees.--Trees 5 inches d.b.h. or larger that do not meet the specifications for saw-timber trees now but are straight and clear enough to become saw-timber trees in the future.

Seedling and sapling trees.--Trees smaller than 5 inches d.b.h. that appear to be well established.

Cull trees.--Trees 5 inches d.b.h. and larger that do not meet the specifications for saw-timber or pole-timber trees.

Timber Volume

Primary growing stock.--Net volume, in cubic feet, of live saw-timber trees and live pole-timber trees from stump to a minimum 4-inch top (of central stem) inside bark.

This volume is also given in rough standard cords (bark included). Cord volume is derived from cubic-foot volume by applying a factor of 80 cubic feet per cord.

Saw-timber volume.--The net volume, in board feet (International ¼-inch rule), of sawlogs in saw-timber trees of all species.

FOREST SURVEY METHODS

These forest statistics for Forest District No. 7 are based on information gathered from sample plots. These plots are distributed randomly over the entire area.

They were first located on aerial photographs. Trained photo interpreters then examined the photos and classified each forest plot according to stand size. Field crews inspected enough plots on the ground to attain a specified level of statistical accuracy. Species and volume data were collected on these ground plots.

The survey was designed for maximum accuracy in the estimate of total merchantable cubic volume.

ACCURACY OF THE ESTIMATES

The estimates in this report may contain two kinds of error.

First, photo interpreters may make mistakes of judgment and fieldmen may make mistakes in measuring or recording. There is no practical way to find out just how often such errors occur. But they are kept to a minimum by closely checking all phases of the work.

The second kind of error is associated with sampling procedures. Fortunately the size of this error can be measured. In Forest District No. 7 the chances are 2 to 1 that the error will not exceed 9.4 percent of the total forest area, 10.1 percent of the total board-foot volume, or 6.5 percent of the total cubic-foot volume.

These percentages show that the cubic-foot estimates are more accurate than area estimates, and that area estimates are more accurate than board-foot estimates.

In each of the tables, the total figures are more accurate than the subtotals. The subtotals are more accurate than any of the individual figures. Figures that are small in relation to totals are subject to larger sampling errors.

SPECIES TALLIED

The various tree species tallied in District No. 7 are listed below.[1] Approved common names are shown in parentheses if these differ from the brief name used in the tables. Approved scientific names are underlined.

Softwoods

Spruce (Red spruce)	- Picea rubens
Fir (Balsam fir)	- Abies balsamea
Hemlock (Eastern hemlock)	- Tsuga canadensis
White pine (Eastern white pine)	- Pinus strobus
(Red pine)	- Pinus resinosa
Cedar (Northern white-cedar)	- Thuja occidentalis
Tamarack	- Larix laricina
Other softwoods (Jack pine)	- Pinus banksiana

[1] U.S. FOREST SERVICE. CHECK LIST OF THE NATIVE AND NATURALIZED TREES OF THE UNITED STATES INCLUDING ALASKA. U.S. FOREST SERVICE. 325 PP. 1949.

Hardwoods

Sugar maple	- Acer saccharophorum
Red maple	- Acer rubrum
Red oak (Northern red oak)	- Quercus borealis
White oak	- Quercus alba
Yellow birch	- Betula lutea
Paper birch	- Betula papyrifera
Beech (American beech)	- Fagus grandifolia
Ash	- Fraxinus species
Basswood (American basswood)	- Tilia americana
Black cherry	- Prunus serotina
Hickory	- Carya species
Elm	- Ulmus species
Aspen (Bigtooth aspen)	- Populus grandidentata
Black walnut	- Juglans nigra
Other hardwoods (Gray birch)	- Betula populifolia
(Butternut)	- Juglans cinerea
(Downy serviceberry)	- Amelanchier arborea
(Eastern hophornbeam)	- Ostrya virginiana
(American hornbeam)	- Carpinus caroliniana

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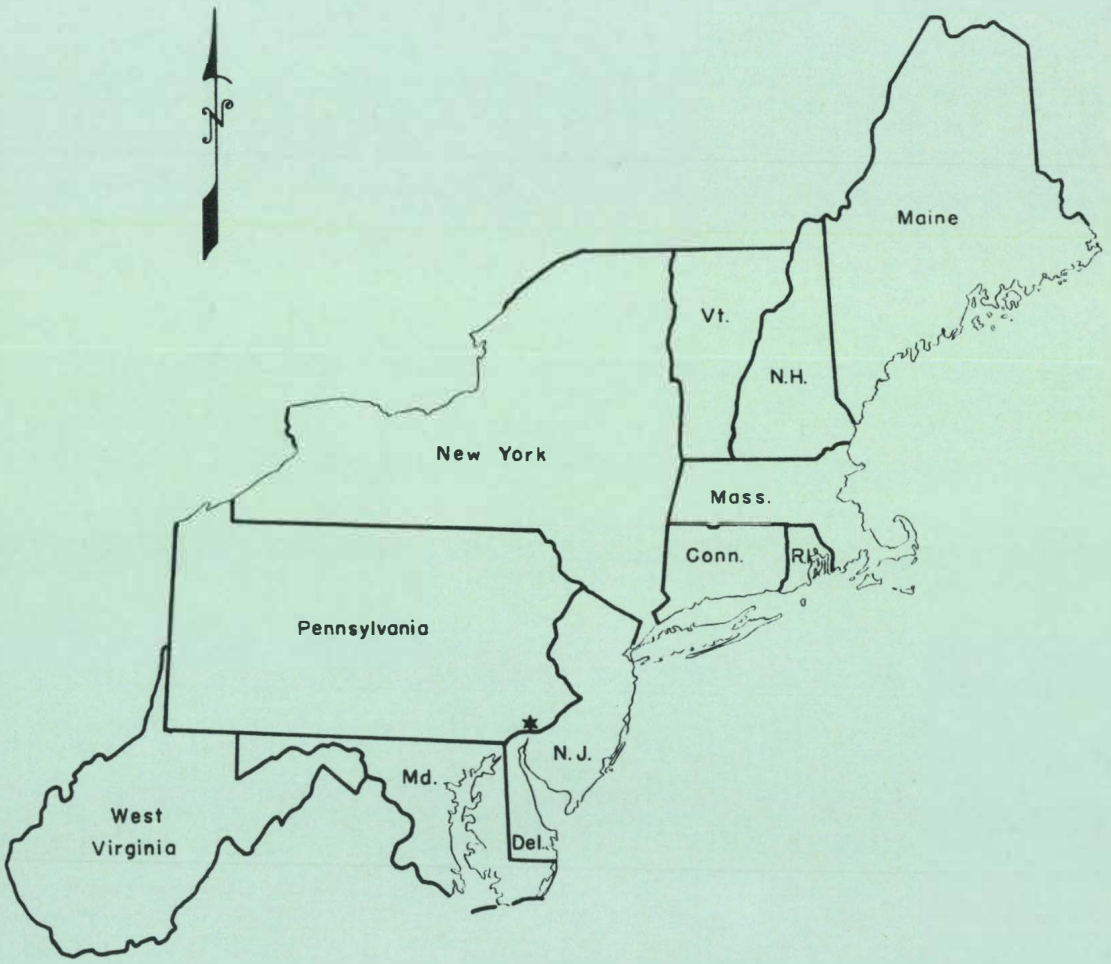

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